

Title (en)

Fuel injector having algorithm controlled look-ahead timing for injector-ignition operation

Title (de)

Einspritzventil mit algorithmusgesteuerter Look-Head-Taktung für Einspritzzündungsbetrieb

Title (fr)

Injecteur de carburant à synchronisation à lecture anticipée commandée par un algorithme pour une opération allumage-injection

Publication

EP 2522846 A2 20121114 (EN)

Application

EP 12179407 A 20070328

Priority

- EP 07754415 A 20070328
- US 78796406 P 20060331
- US 69209207 A 20070327

Abstract (en)

The present invention provides an injector-ignition fuel injection system for an internal combustion engine, comprising an ECU controlling a heated catalyzed fuel injector for heating and catalyzing a next fuel charge, wherein the ECU uses a one firing cycle look-ahead algorithm for controlling fuel injection. The ECU may further incorporate a look-up table, auto-tuning functions and heuristics to compensate for the rapid rotational de-acceleration that occurs near top dead center in lightweight small ultra-high compression engines as may be used with this invention. The ECU may further ramp heat input to the injector in response to engine acceleration requests and, under such circumstances, may extend its look-ahead for up to four firing cycles.

IPC 8 full level

F02M 43/04 (2006.01); **B05B 1/24** (2006.01); **F02B 51/02** (2006.01); **F02D 41/00** (2006.01); **F02M 47/02** (2006.01); **F02M 51/00** (2006.01); **F23D 11/44** (2006.01)

CPC (source: EP US)

F02B 31/00 (2013.01 - EP US); **F02D 41/0025** (2013.01 - EP US); **F02M 27/02** (2013.01 - EP US); **F02M 51/0671** (2013.01 - EP US); **F02M 53/06** (2013.01 - EP US); **F02M 57/00** (2013.01 - EP US); **F02M 69/047** (2013.01 - EP US); **G06F 16/583** (2018.12 - EP US); **F02B 3/06** (2013.01 - EP US); **F02B 23/0624** (2013.01 - EP US); **F02B 23/0669** (2013.01 - EP US); **F02B 2275/14** (2013.01 - EP US); **Y02T 10/12** (2013.01 - EP US)

Citation (applicant)

"CRC Handbook"

Cited by

AT520481A1; AT520481B1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

US 2007227492 A1 20071004; **US 7444230 B2 20081028**; AU 2007241139 A1 20071101; CA 2647065 A1 20071101; CN 101438049 A 20090520; CN 101438049 B 20110713; EP 2004982 A2 20081224; EP 2004982 A4 20100414; EP 2522846 A2 20121114; EP 2522846 A3 20141224; JP 2009532607 A 20090910; US 2009088952 A1 20090402; US 2010204901 A1 20100812; US 7657363 B2 20100202; US 7945375 B2 20110517; US RE45644 E 20150804; WO 2007123670 A2 20071101; WO 2007123670 A3 20080821

DOCDB simple family (application)

US 69209207 A 20070327; AU 2007241139 A 20070328; CA 2647065 A 20070328; CN 200780015091 A 20070328; EP 07754415 A 20070328; EP 12179407 A 20070328; JP 2009503025 A 20070328; US 2007007895 W 20070328; US 201313797196 A 20130312; US 23730208 A 20080924; US 63762709 A 20091214